MALFORMATIONS AND PERINATAL MORTALITY

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It is of interest to know the relation between the incidence of malformed infants and perinatal mortality. In our department in FOCH Hospital, out of 13933 deliveries (1974-1980), were counted 192 major malformations (1.38 %), among which we observed :

STILL BIRTHS	11	5.7 %
NEONATAL DEATHS	33	17.2 %
PERINATAL MORTALITY	44	22.9 %

Regarding the incidence of malformations on general mortality, the following figures have been reported :

	MALFORMED		OVERALL	
STILL BIRTHS	11	/	78	(14 %)
NEONATAL DEATHS	33	/	83	(39.8 %)
PERINATAL MORTALITY	44	/	161	(27.3 %)

CONTRIBUTION OF FETAL HEART RATE IN THE INTRAUTERINE DIAGNOSIS OF MALFORMATIONS

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Today, the contribution of fetal heart rate in the diagnosis of malformations may certainly appear small. This question was of interest when echography was not yet available, and when all the methods used to help in the diagnosis of fetal anomalies remained to be developed. Nevertheless, when we were asked to participate in this panel we thought that it would be useful to recall what this investigation offers.

From 1970 to 1980, we discovered, out of 21987 deliveries, 317 major malformations (1.5%), the distribution of which is : 10% for central nervous system and multiple defects, 27% for cardiovascular, 19% for abdominal or other visceral, 18% for palatal, 11% for trisomies, 5% for miscelleanous. In the opposite from labor,antepartum monitoring is not practiced systematically. It is only performed when precise indications are present. Across this period of 11 years, 35.2% of the infants had at least one recording taken during the pregnancy. This frequency is analogous (36.6%) for those found to be malformed at birth. For 38% of these, a CTG had already revealed anomalies during pregnancy. This was quite significantly different from the overall population, in which 90% of the traces are normal, and 10% only abnormal, (1% very pathological).

The CTG modifications were divided, in order of frequency, firstly into nervous system malformations (69%), then in multiple malformations (66.7%) and the most interestingly, in trisomies (40%); then came abdominal and visceral malformations (38.9%), cardiac (36.7%) and finally, as one might expect, palatal malformations (22%). Among these anomalies,many isolated decelerations (spikes) were counted (32.2%), certain of them coinciding with fetal movements. Also, there were more late and variable decelerations during contractions at the end of pregnancy (11%) than in the overall population. There were slightly fewer

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sporadic accelerations, a fact connected with decreased fetal movements. Long term variability modification was the major sign; a silent pattern was found in 23.3% of cases, whereas its frequency was only 0.2% in the general population. This pattern is observed on the traces a little time before the fetus is going to die. But it is specially prominent in multiple or central nervous system malformations, being found in 1 such case out of 2. Before the era of echography, the discovery of a silent pattern, other than in a small-for date fetus was suggestive of such a malformation, and led to radiologiacal examination to show up cranial, or spinal defect. Malformations are sometimes combined with severe case of poor intrauterine fetal growth, and when we had attempted to treat them with betamimetics, we only did it after we had been quite sure that the fetal heart rate was quite normal.Except a silent pattern, the CTG changes were not characteristic of a type of malformation.

However, the trisomic traces were sometimes of a special type. This was not in the nature of a specific modification, but rather of a group of minimal anomalies which imparted a suspicious aspect to the general look of the recording. This combination grouped together very short isolated decelerations with or without small accelerations, the whole on a background of small oscillations. There were no other deceleration. This aspect of trisomic traces, although inconstant, does certainly not confirm the diagnosis, but merely enables it to be suspected, which is very important all the same in this malformation when echography remains nearly silent.

Finally, while for the cardiac malformations 1/3 of the traces were considered to be suspicious or pathological, without characteristic changes, it should be appreciated that the other 2/3 remained absolutely normal, and that this type of investigation during pregnancy cannot contribute anything to their diagnosis. On this subject, a word should be said about fetal arythmias.Although they are perfectly audible, it is not always possible to record them because of the logic of the devices used. These disorders in the conduction system, which can sometimes be disquieting, are not necessarily evidence of malformation. Most of these arythmias,although found on several successive examinations, disappear after birth. However, they always merit intensive exploration of the neonate.

As for the fetal heart rate during labor, it did not show any particular abnormality, but a high frequency of silent pattern; and the level of abnormal pattern (29.8%) was much higher than that of the overall population (6.3%).

Is there today anymore indication for antepartum fetal heart rate in order to discover a malformation ? No, in an attempt to detect it, since other much more precise investigations are used. Yes, when a malformation has been discovered by echography, in order to contribute to the assessment of fetal condition. For the cases in which one might accept prolongation of the pregnancy, the fetal heart rate data enable one to act with discrimination, to be prepared for possible surgical operation and to manage the best way to receive a malformed infant whom one will be able to do a service.

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